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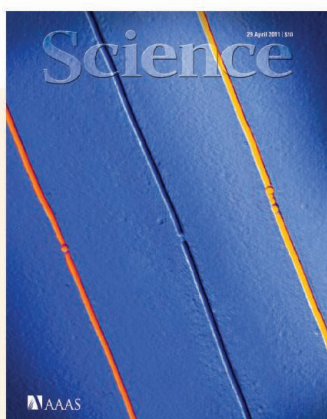


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COVER

False-colored atomic force microscopy image of three carbon nanotubes on a silicon dioxide substrate (composite of scans on three devices). The middle nanotube is disconnected by a ~40-nanometer gap; the outer nanotubes have similar nanogaps bridged by a phase-change material (PCM) bit. Such small bits can be switched by voltage pulses with energy consumption that is one hundred times lower than that of modern PCM data storage. See page 568.

Image: Alex Jerez, Feng Xiong, and Eric Pop, University of Illinois Urbana-Champaign

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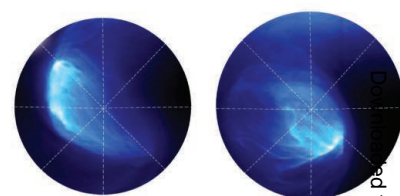
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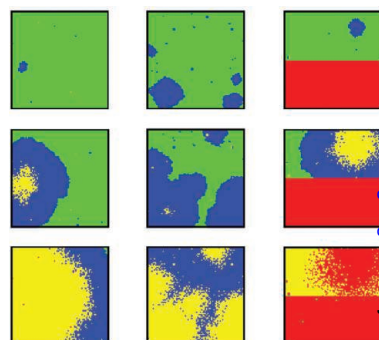
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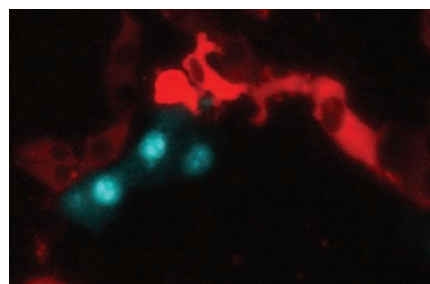
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Structural Basis for Methyl Transfer by a Radical SAM Enzyme

A. K. Boal et al.

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10.1126/science.1205358

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Human Cytomegalovirus Directly Induces the Antiviral Protein Viperin to Enhance Infectivity

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Human cytomegalovirus uses a host-encoded antiviral protein to its own advantage.

10.1126/science.1202007

Early Warnings of Regime Shifts: A Whole-Ecosystem Experiment

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High-frequency monitoring of manipulated and reference lakes enabled early detection of subsequent catastrophic regime shift.

10.1126/science.1203672

Spin-Liquid Ground State of the $S = 1/2$ Kagome Heisenberg Antiferromagnet

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Imaging Doped Holes in a Cuprate Superconductor with High-Resolution Compton Scattering

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10.1126/science.1199391

The 2010 M_w 8.8 Maule Mega-Thrust Earthquake of Central Chile, Monitored by GPS

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10.1126/science.1204132

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10.1126/science.1202596

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Full text at www.sciencemag.org/cgi/content/full/332/6029/537-a

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B. Sinervo et al.

Full text at www.sciencemag.org/cgi/content/full/332/6029/537-b

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Highlights From Our Daily News Coverage

Expert Panel: Central U.S. Faces

Real Threat of Quake

Millions in the American heartland face a genuine, if uncertain, seismic risk.

<http://scim.ag/new-madrid>

2010's Volcano-Induced Air Travel Shutdown Was Justified

Study finds that Eyjafjallajökull ash could have harmed aircraft.

<http://scim.ag/air-shutdown>

Fire Ants Surf Floods on Rafts of Their Own Bodies

Thousands of ants link together to trap air and repel water.

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The Signal Transduction Knowledge Environment

26 April issue: <http://scim.ag/ss042611>

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RESEARCH ARTICLE: Thioredoxin Mediates Oxidation-Dependent Phosphorylation of CRMP2 and Growth Cone Collapse

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PERSPECTIVE: PI3K and Chemotaxis—

A Priming Issue?

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PERSPECTIVE: Sorting the Signals from the Signals in the Noisy Environment of Inflammation

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SCIENCE CAREERS

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Free Career Resources for Scientists

A Twin Career Story

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Identical twin brothers Alan and Steven Davy are pursuing similar research interests while also seeking to differentiate themselves.

<http://scim.ag/twinstory>

Q&A: Taking Mathematics to Heart

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Mathematician John Wesley Cain works with clinicians, physicists, and engineers in a field called cardiac electrophysiology.

<http://scim.ag/math2heart>

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Integrating Medicine and Science

27 April issue: <http://scim.ag/stm042711>

RESEARCH ARTICLE: Establishment of Antitumor Memory in Humans Using in Vitro-Educated CD8⁺ T Cells

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Antitumor CD8⁺ T cells educated in vitro can induce antitumor responses in humans.

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PERSPECTIVE: Two Roads Diverge—Weight Loss Interventions and Circulating Amino Acids
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Gastric bypass surgery decreases serum amino acids independent of weight loss.

PERSPECTIVE: The NCGC Pharmaceutical Collection—A Comprehensive Resource of Clinically Approved Drugs Enabling Repurposing and Chemical Genomics

R. Huang et al.

The NIH Chemical Genomics Center houses a database and a library of approved drugs.

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